Oberheim

DMX

MIDI / MEMORY EXPANSION
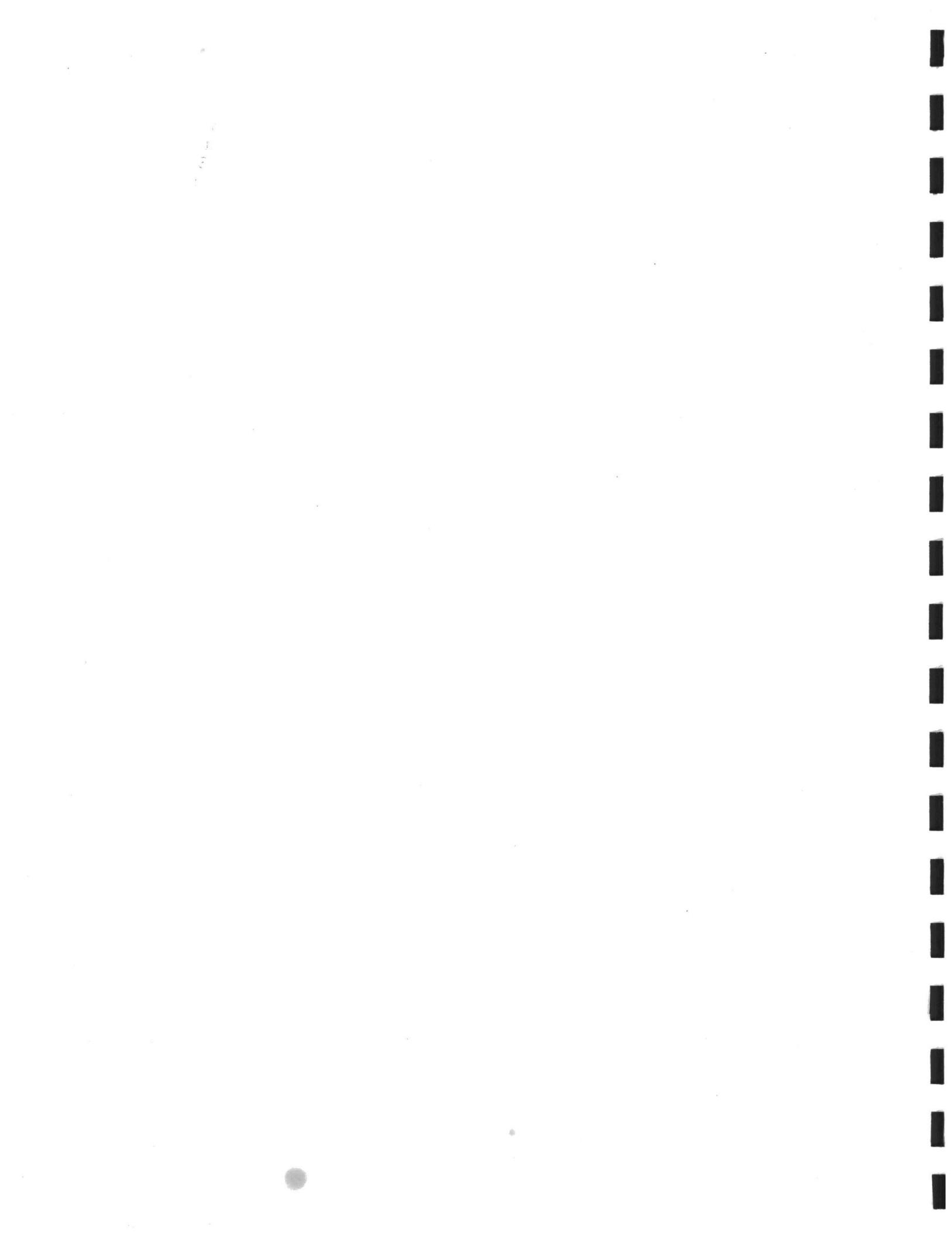## OWNER'S MANUAL ADDENDUM

FIRST EDITION - February 1986

CAUTION: To prevent fire or shock hazard, do not expose this appliance to rain or moisture. Refer servicing to qualified service personnel.

Part Number 950058

DMX MIDI / MEMORY EXPANSION WARRANTY CERTIFICATE

The ECC / Oberheim Limited Warranty is available to the original purchaser of an Oberheim DMX MIDI / MEMORY EXPANSION when purchased from an Authorized Oberheim Dealer **and** installed in his/her DMX Drum Machine by an ECC / Oberheim Authorized Service Center. A current roster of Service Centers authorized by ECC / Oberheim is enclosed in the Owner's Packet included with this DMX MIDI / MEMORY EXPANSION.

To register the Warranty for your DMX MIDI / MEMORY EXPANSION, follow the procedure outlined in the INSTALLATION section of this manual under the heading "How to Obtain Warranty Protection for Your DMX MIDI / MEMORY EXPANSION". The Warranty Certificate at the bottom of this page must first be filled out by the service technician who installed your DMX MIDI / MEMORY EXPANSION. Then you are responsible for completing your section of the Certificate and returning it to Oberheim to be registered.

If you have reason to believe that your DMX MIDI / MEMORY EXPANSION is malfunctioning, refer to the section titled IF YOU HAVE A PROBLEM in the back of this manual.

DMX MIDI / MEMORY EXPANSION WARRANTY REGISTRATION

OWNER INFORMATION

DMX Serial # _____   Date of Purchase _____

DMX Midi / Memory Expansion - Date of purchase _____

Name _____   Dealer _____

Address _____   Address _____

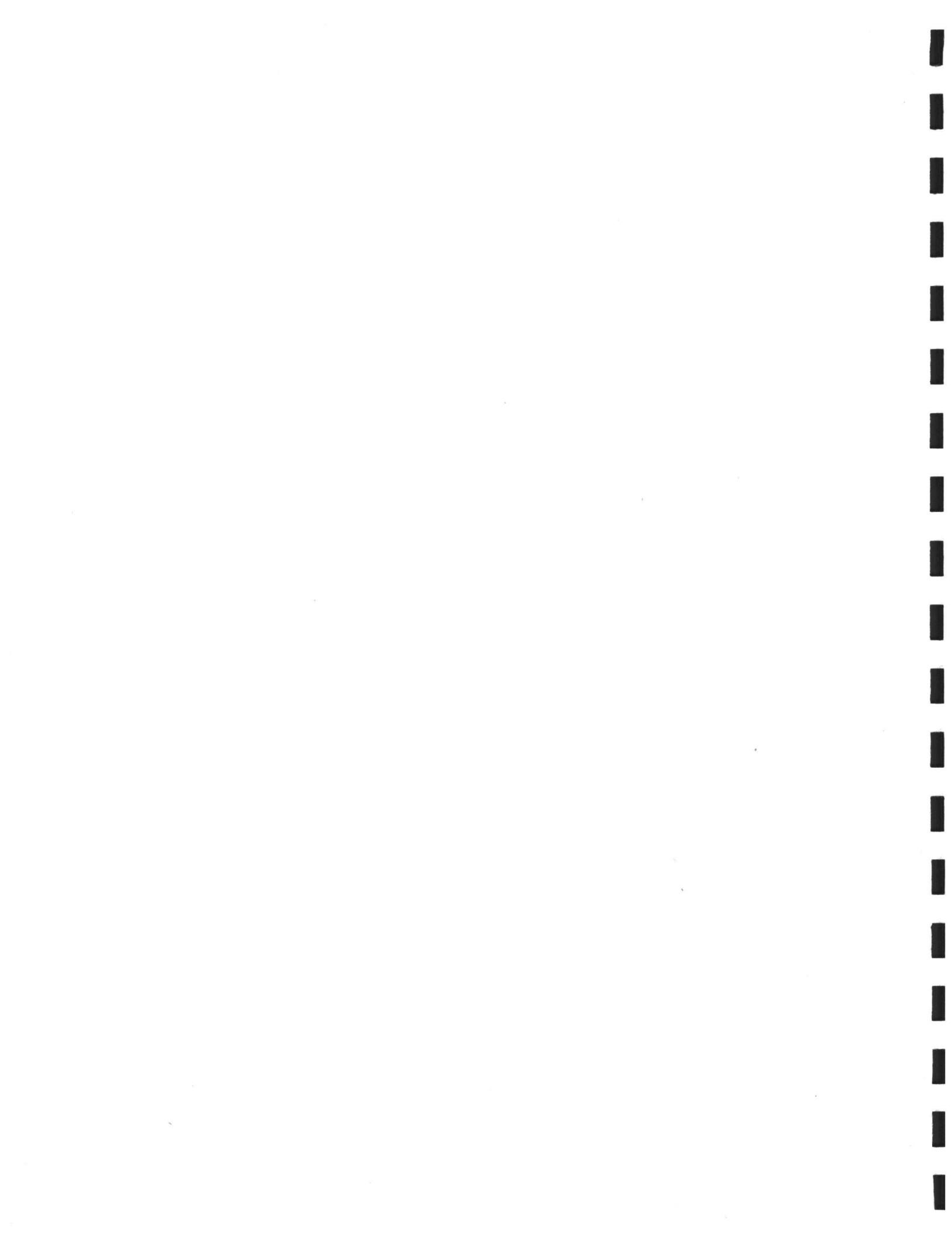City _____   City _____

State _____ ZIP _____   State _____ ZIP _____

SERVICE CENTER INFORMATION
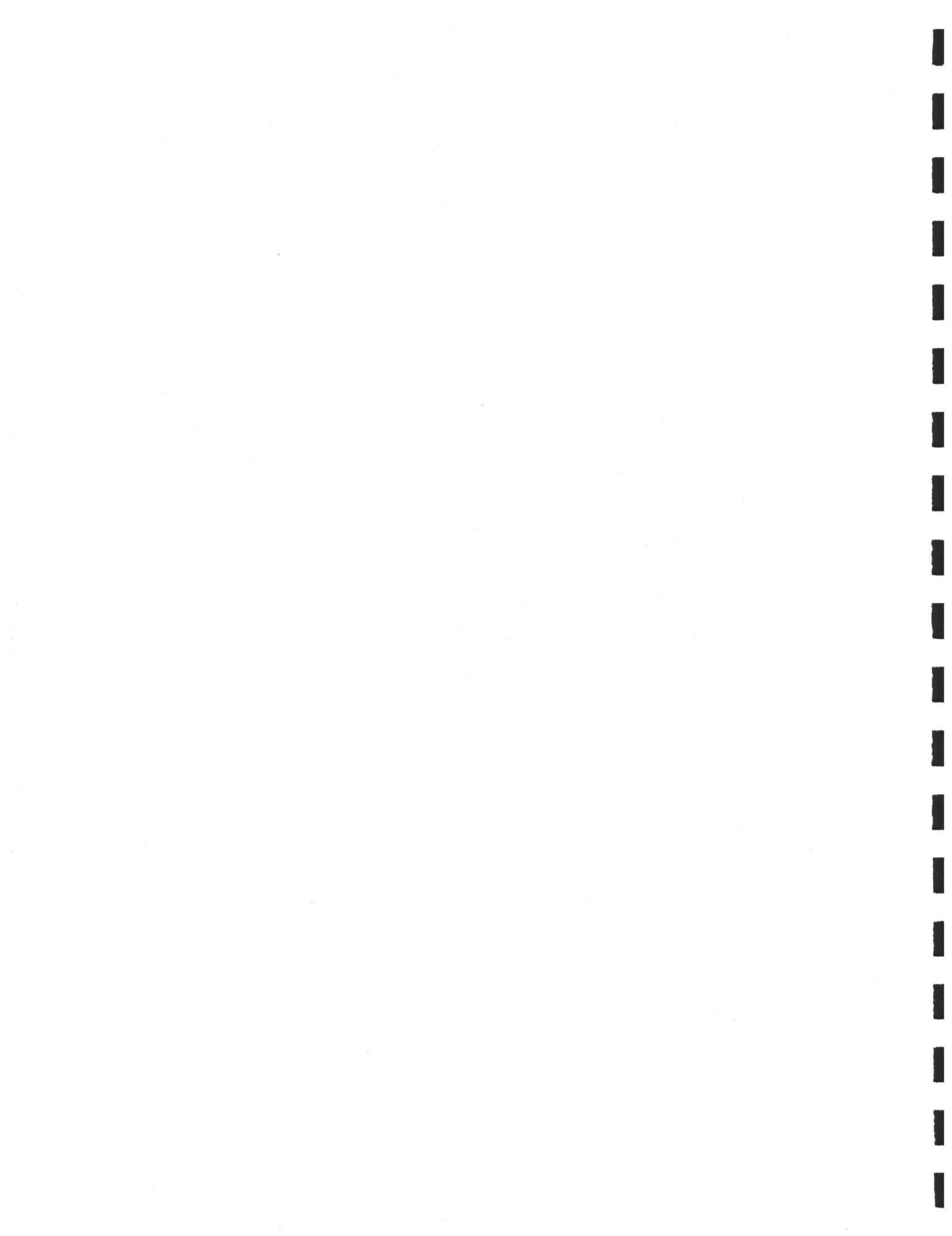
Sevice Center Name _____

Date of Installation _____

Technician's Signature _____

Oberheim DMX
Digital Programmable Drum Machine
MIDI / MEMORY EXPANSION OWNER'S MANUAL ADDENDUM

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Oberheim DMX
MIDI / MEMORY EXPANSION
OWNER'S MANUAL ADDENDUM

Congratulations on your purchase of the DMX MIDI / MEMORY EXPANSION. This comprehensive revision expands the system capability of your Oberheim DMX Digital Drum Machine by adding MIDI Input and MIDI Output capabilities and increasing the total number of drum events to 7000.

The DMX MIDI / MEMORY EXPANSION upgrade can be installed into any existing DMX. Throughout the history of the DMX, Oberheim has provided user-support by developing a number of software and hardware revisions to DMXs in the field. Considerable advances in technology have permitted significant increases in memory capacity and operating features at a relatively low cost. With the new ownership of ECC / Oberheim, this evolutionary philosophy of product development has not changed. Thus, any DMX owner can have his / her DMX brought up to current standards for a fraction of the cost of purchasing the new model just to have these features.

There are basically three major types of DMXs currently in use. Your DMX will fall into one of these three categories:

1. **Revision 2**: The Rev. 2 DMX is characterized by a 2000 drum event memory, 100 Sequences and 50 Songs. The addition of the DMX MIDI / MEMORY EXPANSION will increase the memory to 7000 events, 200 Sequences, 100 Songs and approximately 40 additional operating features as described in this manual. These upgrades in the performance capability of the DMX are included with the implementation of the MIDI Interface.

2. **Revision 3**: The Rev. 3 DMX is characterized by a 5000 drum event memory, 200 Sequences and 100 Songs. The addition of the DMX MIDI / MEMORY EXPANSION will increase the memory to 7000 events but the number of Sequences and Songs remain the same. The 50+ operating features included with the Rev. 3 have been modified in order to properly implement the MIDI Interface. Some of these features have been deleted from the DMX, renamed, relocated or combined with other edit parameters as described in this manual.

3. **Revision 4**: The Rev. 4 DMX is the current production model, characterized by the 7000 note drum event memory, 200 Sequences, 100 Songs and MIDI factory installed. If you have purchased your DMX with MIDI already installed, you have a Rev. 4 and this manual is used in conjunction with the DMX Owner's Manual included with your DMX.

INSTALLATION

If you have a Revision 2 or a Revision 3 DMX, you will need to take your DMX Digital Drum Machine and DMX MIDI/MEMORY EXPANSION kit to an Oberheim Authorized Service Center for installation. Although the procedure is not difficult, installation must be performed by an Oberheim Authorized Service Center in order to register the Warranty. You will invalidate your Warranty if your DMX MIDI/MEMORY EXPANSION is installed by anyone other than an Oberheim Authorized Service Center. To obtain Warranty protection for your DMX MIDI / MEMORY EXPANSION, do the following:

1. Take your DMX Drum Machine, DMX MIDI/MEMORY EXPANSION and the Warranty Certificate on the front page to your nearest Oberheim Authorized Service Center. A current roster is included in your DMX MIDI/MEMORY EXPANSION Owner's Packet.

2. The installation of your DMX MIDI / MEMORY EXPANSION is **not** included in the purchase price. The Service Center performing the work will charge you an installation fee. The Warranty that you will obtain by having your DMX MIDI/MEMORY EXPANSION installed at an Authorized Service Center will cover parts and labor for one year should your DMX MIDI / MEMORY EXPANSION require servicing in the future. The Warranty that you will obtain exists solely for the MIDI / MEMORY EXPANSION upgrade and will **not** extend the warranty for the DMX itself.

3. When your DMX MIDI / MEMORY EXPANSION has been installed, the service technician who performed the work must complete the lower portion of the Warranty Certificate.

4. After you receive your revision 4 DMX from the Service Center, you must complete the upper portion of the Certificate and mail it to:

> OBERHEIM
> A Division of E.C.C. Development Corporation
> 11650 Olympic Boulevard
> Los Angeles, CA   90064

5. When your Warranty has been registered, we will send you notification by mail. Please allow 6 to 8 weeks for delivery. If your DMX MIDI/MEMORY EXPANSION requires servicing before you receive this notification, simply present the installation receipt and the Warranty will be honored.

6. Should your DMX MIDI / MEMORY EXPANSION need servicing, do not attempt repairs yourself. Refer to the section in the back of this manual titled IF YOU HAVE A PROBLEM and contact the Service Center that performed the installation. You have certain rights and responsibilities under the ECC / Oberheim Limited Warranty and we strongly recommend that you read this chapter thoroughly .

HOW TO USE THIS MANUAL

This document is intended as a reference to the new features of the DMX and assumes that you have a working knowledge of the DMX. We suggest trying these features as you read them. If you have trouble understanding the following sections, please consult the DMX Owner's Manual. If an example in the manual doesn't work as described, please check the corresponding section in this addendum, as many functions have changed.

If you are updating your DMX from a Revision 3, please be advised that the following features have been eliminated from the software in order to accomodate the new MIDI Interface:

General Edit Features:

> RECORD LENGTH OF SEQUENCE ON-THE-FLY
> RECORD SONG ON-THE-FLY
> DIGITAL SPLICING

Edit Mode Parameters:

2	SYNC OUT ON / OFF
9	VAMP ON / OFF
11	BEEP ON / OFF
12	< > REPEAT ON / OFF
13	NORM RESPONSE / FAST RESPONSE
20	PLAY SWING ON / OFF
21	SET SWING / FLAM
22	PLAY FLAM ON / OFF
23	LONG FLAM ON / OFF

DIFFERENCES BETWEEN Revision 3 AND
Revision 4 EDIT PARAMETERS

The DMX Revision 4 MIDI / MEMORY EXPANSION software provides many new operational features. Some of these features are new, some were added with the Revision 3 Memory Expansion. To clarify all the features we will assume you do not have Revision 3. Following is a list of the differences between Revision 3 and Revision 4 Edit Parameters.

Revision 3	Revision 4	Revision 3	Revision 4
0 AUTO START OFF	0 AUTO START OFF	14 BAR NUM ON	14 SET DRUM OUTS
0 AUTO START ON	0 AUTO START ON	14 BAR NUM OFF	
1 NO SYNC INPUT	1 MIDI CLOCK	15 DISP CLICK ON	15 SET EXT TRIGS
1 SYNC IN ON	1 DMX CLOCK	15 DISP CLICK OFF	
1 SYNC IN OFF	1 EXT CLOCK 24		
1 AUTO/SYNC ON	1 EXT CLOCK 48		
	1 EXT CLOCK 96		
	(1 SYNC TO TAPE)		
2 SYNC OUT ON	2 CLOCK OUT 24	16 CLICK ON ONE	16 RCV CHAN1-16
2 SYNC OUT OFF	2 CLOCK OUT 48	16 STEADY CLICK	
	2 CLOCK OUT 96		
3 REC COUNT ON	3 REC COUNT ON	17 SET PGMD CLICK	17 XMIT CHAN1-16
3 REC COUNT OFF	3 REC COUNT OFF		
4 PLAY COUNT ON	4 PLAY COUNT ON	18 SET DRUM OUTS	18 OMNI MODE ON
4 PLAY COUNT OFF	4 PLAY COUNT OFF		18 OMNI MODE OFF
5 PLAY CLIK ON	5 PLAY CLIK ON	19 SET EXT TRIGS	19 XMIT TIME ON
5 PLAY CLIK OFF	5 PLAY CLIK OFF		19 XMIT TIME OFF
6 CNT SIGNATURE	6 CNT SIGNATURE	20 PLY SWING OFF	20 MIDI ECHO OFF
6 CNT 4 CLICKS	6 CNT 4 CLICKS	20 PLY SWING ON	20 MIDI ECHO ON
7 BEATS/MIN	7 BEATS/MIN	21 SET SWING/FLAM	21 MIDI SONG ON
7 FRAMES/BEAT	7 FRAMES/BEAT		21 MIDI SONG OFF
8 SONG LOOP ON	8 SONG LOOP ON	22 PLAY FLAM OFF	22 SET MIDI DRUM
8 SONG LOOP OFF	8 SONG LOOP OFF	22 PLAY FLAM ON	
9 VAMP ON	9 PROGRAM TEMPO	23 LONG FLAM ON	23 TRANSPOSE
9 VAMP OFF	9 MANUAL TEMPO	23 LONG FLAM OFF	
10 PROGRAM TEMPO	10 SONG TIME ON		
10 MANUAL TEMPO	10 SONG TIME OFF		
11 BEEP ON	11 BAR PLUS BEAT		
11 BEEP OFF	11 RUNNING STEP		
12 > REPEAT ON	12 CLICK ON ONE		
12 > REPEAT OFF	12 STEADY CLICK		
13 NORM RESPONSE	13 SET PGMD CLICK		
13 FAST RESPONSE			

Many parameters of the DMX may be set by the user. Access to these parameters is through the EDIT key, except while in Select Song mode where the EDIT key is used to create or display parts of Songs. Use the "<" and ">" keys to move between EDIT PARAMETERS, or type in the number of the parameter to be changed. Unless otherwise stated, the STEP key is used to change the parameters.

Revision 4 EDIT MODES

DISPLAY READS	PARAMETER DESCRIPTION

0 AUTO START OFF — When Auto-Start is OFF, the DMX will not respond to any external Clock or Sync signals until you first press PLAY, RECORD-and-PLAY (to start Recording) or until the DMX receives a MIDI START command. Any of these puts the DMX into a "Ready" mode and the drum machine will wait for the Timing Source selected in Edit Parameter 01 to start before it will run.

If "DMX CLOCK" is selected in parameter 01, the DMX will still respond to pressing the PLAY key or RECORD-and-PLAY on the front panel whether Auto-Start is ON or OFF.

If "MIDI CLOCK" is selected in parameter 01, the DMX will respond to MIDI START commands whether Auto-Start is ON or OFF.

0 AUTO START ON — When Auto-Start is ON, external signals (EXTERNAL CLOCK, MIDI CLOCK, or SYNC-TO-TAPE) will cause the DMX to enter play mode **automatically** from STOP position. You no longer need to press PLAY etc. to put the DMX into a "Ready" mode. There are a few things to keep in mind, however, when using Auto-Start as there are some important differences in each of the Timing Sources:

DMX CLOCK - When Auto-Start is ON, pressing the PLAY button will always put the DMX into PLAY Mode. Thus, you can always use the DMX's internal clock as normal even though you may have selected EXTERNAL CLOCK, SYNC-TO-TAPE, or MIDI CLOCK as a Timing Source. This permits you to play the DMX from the front panel without having to go back into Edit Mode and re-select DMX CLOCK. PLAY / STOP will always work from SELECT SEQUENCE (in order to play a selected drum pattern), SELECT SONG (to play a selected Song) or SONG EDIT (in order to play a Song from a selected part in its middle).

EXTERNAL CLOCK or SYNC-TO-TAPE - If you are using the DMX as a slave with its EXT. CLOCK IN and Auto-Start is ON, it will jump into play when incoming clock pulses are detected. Because the DMX is always looking for a clock signal in this mode, any signal (even noise or static in the line) that is present at the CLOCK IN or SYNC IN jacks will place the DMX in Play. This may cause occasional false starts. However, the DMX will not false start in SYNC-TO-TAPE Mode once it locks on to the leader tone present at SYNC IN. It is recommended that about five to eight seconds of the sync tone's leader be recorded onto tape before PLAY is pressed to record the sync tone. This allows enough leader time on playback for the DMX to lock on to the leader and thus preventing false starts.

MIDI - Many MIDI drum machines and sequencers output MIDI Clock Pulses **continuously** which could potentially cause the DMX, for example, to play all the time if it is a slave to one of these devices. The DMX will ignore these continuous clocks until it recognizes a MIDI START command from the Master. It will play slaved to the MIDI CLOCK pulses until it receives a MIDI STOP command from the Master.

You can only Auto-Start from Select Sequence or Select Song modes. Auto-Starting the DMX from an External Clock source or Sync-to-Tape cannot occur if the DMX is displaying TEMPO or QUANTIZE or any of these Edit Parameters, for example.

TIMING SOURCES

The DMX derives its timing from a number of sources, both internally and externally. The following Edit Parameters describe how the DMX can be used in a variety of interfacing situations.

DMX as the Master

1 DMX CLOCK
When selected, the internal clock source of the DMX is used and the DMX can be used as a stand alone instrument. If selected, this parameter is used in tandem with Edit Parameter 2 CLOCK OUT to select the rate of its clock output. The DMX will also output a MIDI CLOCK in this mode if Edit Parameter "19 XMIT TIME" is selected ON.

DMX as a Slave

1 MIDI CLOCK
When selected, the clock source is received from MIDI IN at a rate of 24 clock pulses per 1/4 note. Unlike External Clock-pulses, the MIDI clock rate of 24 clock pulses is standardized and makes the DMX's timing compatible with all MIDI instruments. Remember, Edit Parameter "0 AUTO START" must be ON for MIDI CLOCK to work.

1 EXT CLOCK 24
External Clock 24. When selected, the clock source is received from EXT CLOCK IN at 24 clock-pulses per 1/4 note.

1 EXT CLOCK 48
External Clock 48. When selected, the clock source is received from EXT CLOCK IN at 48 clock-pulses per 1/4 note.

1 EXT CLOCK 96
External clock 96. When selected, the clock source is received from EXT CLOCK IN at 96 clock-pulses per 1/4 note.

1 SYNC TO TAPE
Enables the DMX to slave to its own sync tone recorded on multi-track tape. Sync-To-Tape can only be accessed when there is a plug in the SYNC-TO-TAPE IN jack. If SYNC-TO-TAPE IN is not connected, this option will not appear on the display.

When a plug is first inserted, Sync Mode is **automatically selected** although you still may change this by stepping through the other choices. The DMX will output Sync-To-Tape timing data whenever in RECORD or PLAY and will output a leader tone while in STOP or any other modes.

IMPORTANT NOTE:

The DMX has the ability to output timing pulses while it being slaved, but please note that there is a limitation in this feature. The DMX cannot output a timing pulse that has a higher rate than the one that it is receiving. As an example, if the DMX is slaved at 48, it can only be set to output at 48 or 24, not 96. If the DMX is slaved to the MIDI CLOCK, it can only output MIDI CLOCK or a 24 clock-pulse.

Master Clock Rates

When used as a Master Clock source utilizing its EXT CLOCK OUT jack, the DMX clock rate can be changed to provide compatibility with other brands of drum machines or Sequencers without the need for conversion boxes. Be sure to select Edit Parameter 1 to "DMX CLOCK".

2 CLOCK OUT 24	When selected, the Clock Output of the DMX is at 24 clock-pulses per 1/4 note.
2 CLOCK OUT 48	When selected, the Clock Output of the DMX is at 48 clock-pulses per 1/4 note.
2 CLOCK OUT 96	When selected, the Clock Output of the DMX is at 96 clock-pulses per 1/4 note.

PLAY Mode / RECORD Mode OPTIONS

| 3 REC COUNT ON | When selected ON, the DMX gives a count-down at the beginning of a Sequence in RECORD mode. The type of count-off used is selected in Edit Parameter 6: CNT SIGNATURE / CNT 4 CLICKS. |
| 3 REC COUNT OFF | When selected OFF, there is not a count-down at the beginning of a Sequence in RECORD mode and the DMX will begin recording the Sequence immediately as the RECORD and PLAY keys are pressed, just as normal. |

| 4 PLAY COUNT ON | When selected ON, the DMX gives a count-down at the beginning of a Sequence in PLAY mode. The type of count-off used is selected in Edit Parameter 6: CNT SIGNATURE / CNT 4 CLICKS. |
| 4 PLAY COUNT OFF | When selected OFF, there is not a count-down at the beginning of a Sequence in PLAY mode and the DMX will begin playing the Sequence immediately as the PLAY key is pressed or if Auto-Starting, when clock pulses begin, just as normal. |

| 5 PLAY CLIK ON | When ON, the metronome is enabled to the mixed output. |
| 5 PLAY CLIK OFF | When OFF, the metronome is disabled from the mixed output. |

This Edit Parameter only affects the Click in the PLAY Modes. The metronome is always available in RECORD Mode.

The back panel CLICK OUT individual output is always active and is not affected by the status of either of these two parameters.

| 6 CNT SIGNATURE | When selected, REC COUNT and PLAY COUNT will count-off at the programmed Time Signature of the Sequence. For example, if the current Signature is 7/8, the count-down will consist of seven eighth-note clicks. |
| 6 CNT 4 CLICKS | When selected, the count-down is four clicks at the current Click Value set with the SIGNATURE key. For example, if the current Click Value is 7/8, the count-down will consist of four eighth-note clicks. |

SPECIAL PERFORMANCE OPTIONS

| 7 BEATS / MIN | When selected, the Tempo of all Sequences will be displayed as the number of BEATS PER MINUTE, the normal Tempo mode of the DMX. |
| 7 FRAMES / BEAT | When selected, the Tempo of all Sequences will be displayed as the number of FRAMES PER BEAT expressed in Frames and eighths of Frames (see TEMPO). The Frames display is shown as either a whole number or as a number with a decimal-type fraction. This fraction appears to be expressed in standard "tenths" but actually represents eighths of Frames. This only affects the display and does not change the actual Tempo of the Sequences. |

FRAMES / BEAT is used when it is required that Tempo be displayed in frames for use in film or video production.

8 SONG LOOP ON	When selected, any Song will repeat from the beginning after reaching its programmed end.
8 SONG LOOP OFF	When selected, any Song will stop as normal when reaching its programmed end.
9 PROGRAM TEMPO	When selected, the Tempo follows the programmed value for each Sequence.
9 MANUAL TEMPO	When selected, the Tempo is under manual control. This means that whatever Tempo is selected affects **all** Sequences and Songs. This is useful for maintaining continuity in a Song whose Sequences were originally recorded at various Tempos. Note: the current Tempo is always remembered when recording a Sequence.
10 SONG TIME ON	When selected ON, the Song Time is displayed. When in SELECT SONG Mode, pressing TEMPO will display the Tempo of the Song's first Sequence and the total length of the Song expressed in minutes and seconds. When a Song is being played, pressing TEMPO will display the Tempo of the Sequence currently playing and the amount of **elapsed** time of the Song. An excalmation point ("!") will be displayed if the DMX's processor is rounding off the elapsed time to the nearest second.
10 SONG TIME OFF	When selected OFF, the Song Time is not displayed. This is useful with long Songs. When calculating the time of a long Song, the DMX's response time will slow down.
11 BAR PLUS BEAT	When selected, the display will show the current bar and flash a decimal point at the click value (a star is flashed on Beat 1 of a measure).
11 RUNNING STEP	When selected, the display will show the current beat transformed to the current Quantize value. Example: if the Signature is 7/8 and Quantize is set to 1/16 notes, on beat 5 the display will read 10/16.
12 CLICK ON ONE	When selected, there will always be a click on the first beat of the Sequence. Sometimes this mode causes the click to be uneven. For example: one bar of 7/8 with 1/4 note click.
12 STEADY CLICK	When selected, the click will function like a traditional metronome and will not restart on the down beat of the sequence.
13 SET PGMD CLICK	While in this edit parameter, holding down any combination of drums and then pressing RECORD will enable a single click through the Click output in PLAY Mode when that particular combination of drums occurs on the same beat. This allows the CLICK OUT to be used as a programmable trigger output.

The normal steady metronome click will still be given in Record Mode. The click can be disabled (turned off) entirely by pressing RECORD while holding ERASE when in this mode. Note that this overrides all other click enables.

Click can be set to Normal by hitting RECORD while holding no drums while in this mode. This affects the rear panel CLICK OUT as well as the mixed metronome.

NOTE: The phrase "any combination of drums" means any combination of up to 8 drums with a limit of one drum per drum channel. Thus pressing BASS 1 and BASS 3 has the same effect as only pressing BASS 3. On all vertical columns of drum buttons, the lowest button has priority. |
| 14 SET DRUM OUTS | When in this edit mode, hitting a drum button while holding RECORD enables the output for that drum. Hitting a drum button while holding ERASE disables that drum. Hitting RECORD while holding ERASE enables all the drums. Note that this affects only the audio output of the DMX; the drums can still be recorded and erased as normal. Try using this with SET PGMD CLICK while driving an arpeggiator clock with the DMX. |

15 SET EXT TRIGS   Playing an external trigger while holding a drum button assigns that drum to that trigger. Playing a trigger while holding ERASE disables the trigger. Note: Since this particular Edit Parameter does not allow triggers to be played accurately in real time, only use this mode to set triggers, not to play them. If you plan to trigger the DMX's voices from MIDI, use Edit Parameter 22 SET MIDI DRUM for this purpose.

MIDI OPTIONS

16 RCV CHAN 1,etc   This selects the MIDI Channel on which the DMX receives.

If OMNI Mode is ON, the DMX will receive on **all** MIDI Channels. If a Master drum machine is transmitting on this same channel and/or OMNI Mode is ON, the DMX will echo any drum events occuring on the Master. Please note that the DMX to will respond to MIDI START, STOP, CLOCK and SONG CHANGE commands from the Master regardless of the selected Channel or whether OMNI Mode is selected ON or OFF.

Example: If you have a "SONG 1" programmed in both machines consisting of different parts, you may not want the slave to echo the Master's part as well as play it's own part. If OMNI Mode is OFF and the RECEIVE channel is different between the two machines, the MIDI Clock will synchronize the two machines and transmit START, STOP, and SONG CHANGE information without echoing the Master drum machine's part. Sequence changes are never transmitted.

17 XMIT CHAN 1,etc   This selects the MIDI Channel on which the DMX transmits.

18 OMNI MODE ON   When selected, the DMX receives MIDI information on ALL 16 MIDI channels.
18 OMNI MODE OFF   When OMNI mode is OFF, the DMX receives MIDI information only on the MIDI Channel set with Edit Parameter 16.

19 XMIT TIME ON   When selected, the DMX will send MIDI Clock out at 24 clock-pulses per 1/4 note.
19 XMIT TIME OFF   When selected, the DMX does not transmit MIDI Clock.

20 MIDI ECHO OFF   When selected, the DMX does not echo (re-transmit) MIDI IN data received to it's MIDI OUT.
20 MIDI ECHO ON   When selected, the DMX takes any incoming MIDI data that the DMX will accept and echoes (re-transmits) it to it's MIDI Output. Example: When the DMX responds to a compatible START command, it then echoes it to MIDI OUT. If an unacceptable command, such as a synthesizer's patch change is received, the DMX will not respond to it and also not echo it.

21 MIDI SONG ON   When selected, the DMX will change Songs via MIDI command from the Master. The DMX must be in STOP for this command to be recognized. Note: Only the Song's **index number** is being received via MIDI. The actual contents of a particular Song are not received.
21 MIDI SONG OFF   When selected, the DMX will **not** change Songs via MIDI command from the Master.

22 SET MIDI DRUM   On MIDI drum machines, the drum buttons are transmitted as MIDI Notes. This function allows you to set a MIDI Note to a particular drum button from a MIDI synthesizer or sequencer, for example. Playing a note into the MIDI IN while holding a drum button sets the note to that drum. Playing a note into the MIDI IN

while holding ERASE sets the note not to play any drum. A drum can be programmed to several notes, but a note can only be programmed to one drum. These MIDI notes must be in a 32-note range. See diagram on Page 21.

Pressing RECORD and COPY in this mode will reset the notes to default settings. Pressing RECORD and ERASE clears all settings. (Refer to the diagrams on Pages 21 and 22 for the DMX's and MIDI DX's default ranges and MIDI Note Number settings).

23 TRANSPOSE

The range of MIDI Notes in the DMX covers a 32-note range and is set with this parameter. While in this mode, playing a note into MIDI IN while holding RECORD sets the note to be the lower limit of the 32-note range. The display will show the MIDI Note value of this note. This 32-note range will shift along the keyboard according to what you have selected as the MIDI note of the lower limit.

KEYPAD

Three digits need not always be entered to select a given Sequence or Song. Digits entered within one second of each other are assumed to be part of the same number. This means that Sequence 7 can be selected by typing only "**7**". Sequence 17 can be selected by typing "**17**", Sequence 117 can be selected by typing "**117**", if each digit is entered within one second of the previous one. "Leading Zeros" can be entered if desired, but are suppressed on the display.

It is possible to use the KEYPAD to switch between Sequences during PLAY. Suppose the DMX is playing Sequence 0. Typing "**10**" will cause the DMX to play Sequence 10 after completing Sequence 0. The display will read "**SEQ 0 / 10**" to show that Sequence 0 is currently playing and that Sequence 10 will be played next.

Switching between Songs during PLAY, or between a Song and a Sequence during PLAY, is no longer an option.

RECORD

Holding RECORD while in Select Sequence or Select Song displays the percentage of memory available to record the current Sequence. The percentage of memory available at a given time varies depending on the length of the Sequence to be recorded.

Holding RECORD and pressing TEMPO while in Select Sequence enters Cue Tempo (see TEMPO).

Holding RECORD and pressing PLAY while recording a Sequence "Punches Out" into PLAY Mode. Once you have "Punched Out" of a Sequence, and if you have not changed to another Sequence, you can "Punch In" to this same Sequence by again holding RECORD and pressing PLAY. You can punch in any time, but the DMX will not re-enter RECORD Mode again until the Sequence loops back to its beginning.

ERASE

While recording a Sequence, holding ERASE and any combination of drum buttons will erase those drums from the Sequence for the length of time that the buttons are held. This is useful when you want to erase certain wrong events from a Sequence without removing the entire occurence of a particular drum. This replaces the "Erase-on-the-Fly" mode of the Revision 2 DMX. Holding ERASE and RECORD while recording a Sequence will erase **all** drums while the buttons are held. The erased drums will not sound.

In STOP, holding ERASE while pressing RECORD once erases all notes from the Sequence, but retains its LENGTH, TEMPO and TIME SIGNATURE information. At this point you may reprogram the Sequence, or use this feature to program blank spaces into Songs. Erasing the Sequence a second time resets the Sequence to the standand default condition of 2 bars, 80 beats per minute, 4/4 time signature. The display will verify that this has happened by reading: "SEQ **XXX** DELETED" and will completely remove the Sequence from memory.

In Song Mode, a Song is erased by holding ERASE and pressing RECORD (as in Sequence Mode).

To ERASE EVERYTHING, hold ERASE and press both < > buttons. The display will show the message "PRESS < > TO EMPTY". Again, press both < > buttons. This will clear all of memory, but will have no effect on the EDIT PARAMETERS.

FAILSAFE ERASE: Under certain circumstances, many computer based products may lock up. In particular, if the messages "INTERNAL ERROR" or "PRESS < > TO EMPTY" appear on the display unexpectedly, the DMX has gotten lost. In this instance clearing memory will solve the

lock up problem, but you will lose all your work too! If this condition ever happens, we **strongly advise** recording your memory on a cassette. Immediately enable CASSETTE MODE on the back panel and follow the directions in your DMX Owner's Manual. When your memory is safely on cassette, proceed as follows: Press any key and the DMX will attempt to proceed. If it locks up again, even turning the power off and on again may not help.

When all else fails, turn the power off. Then, while holding down the ERASE key, turn the power on again. This will clear all of the memory and reset the Edit Parameters and MIDI Note assignments to their default values (see accompanying diagrams in the back for the DMX as well as the MIDI DX). The memory protect switch is ignored when performing FAILSAFE ERASE.

TEMPO

Tempo can be displayed in Beats/Minute or Frames/Beat, selectable in Edit Parameter 7. When in Frames/Beat mode, pressing TEMPO will display a reference calculation of how many frames of film equal one beat, the amount of frames being dependent on the Frames/Second amount.

Frames/Second can be changed over a range of 1 to 99 by pressing EDIT while the DMX is in TEMPO Mode. This allows the Frames/Beat indication to be accurate for a wide variety of applications. 24 Frames/Second for film and 30 Frames/Second for non-drop-frame television is standard in North America and Japan; or 25 Frames/Second for film and television in most of the rest of the world. Changing the Frames/Second does not change the Tempo, but only the way Tempo is displayed. As an example, if 24 Frames/Second is selected, a Sequence at a tempo of 95 in 4/4 will have 15.1 Frames-per-Beat. The fractional part of a Frame-per-Beat is an 8th of a frame.

While the DMX is in STOP, TEMPO also displays length of the current Sequence or Song in minutes and seconds.

While playing or recording, TEMPO also displays cumulative elapsed running time in minutes and seconds followed by an exclamation point ("!") if the running time is not exactly accurate. This inaccuracy occurs when the current Tempo is not equivalent to an even number of 1/192 beats per second. Even with the "!" it is close. Note that the cumulative running time will not be accurate when clocking from EXT CLOCK or SYNC IN.

Hitting TEMPO while holding RECORD in Stop mode enters Cue Tempo mode: Tempo may be set by pressing the STEP button or playing an any external trigger in quarter notes at the desired speed. The Tempo of the Sequence will then be set to match that rate. While in Cue Tempo, the TEMPO key will exit to STOP, or the PLAY and RECORD keys may be used to enter Play or Record Mode.

LENGTH

In Sequence mode, Length is displayed in bars. To change the Length of the current Sequence press LENGTH. Then, using the arrow buttons or the number keys, choose the new Length. The new Length will only be entered in memory if the LENGTH key is pressed again to exit this Mode. If any other key is pressed, the Length will not change.

In Song Mode, Length is displayed in PARTS.

In Song Mode, pressing LENGTH while in Song Edit displays the message "SELECT PART **X**". You are now able to select any Part of the Song you wish to be displayed. Pressing the LENGTH button again selects that Part. You may press PLAY in order to start playing the Song from that selected Part.

Maximum Length of a Sequence is 5000 bars.

Maximum Length of a Song is 254 parts.

Length-on-the-Fly Mode available in Revision 3 DMXs has been deleted. It is still possible to acheive uneven lengths by appending Sequences in different time signatures (See DMX Owner's Manual, "Appending Sequences").

SIGNATURE

The Time Signature display has been changed to make signature selection much more efficient. When SIGNATURE has been pressed, CLICK VALUE will be displayed first (see below) then SIGNATURE when pressed again. When entered from Select Sequence Mode, SIGNATURE will now be displayed in standard notation with the numerator (the number or Beats per Measure) flashing. Any number of Beats per Measure from 1 to 99 can be selected using the Keypad or arrows. Pressing SIGNATURE a third time permits selection of the denominator (the beat value). The Beat Value is selectable **only** with the arrow buttons in the following increments:

2	Half Notes	**16**	Sixteenth Notes
3	Half Note Triplets	**24**	Sixteenth Note Triplets
4	Quarter Notes	**32**	Thirty-Second Notes
6	Quarter Note Triplets	**48**	Thirty-Second Note Triplets
8	Eighth Notes	**64**	Sixty-Fourth Notes
12	Eighth Note Triplets	**96**	Sixty-Fourth Note Triplets

192 Real-Time or 128th-Note Triplets

Beat Values such as 5, 7, 13 etc. are not available because in standard time signature notation, there is no such note value as a "fifth" note, a "seventh" note, or a "thirteenth" note etc.

The Time Signature can be changed whether a Sequence is empty or not. Changing the Time Signature of an empty Sequence will not change the number of bars of the Sequence, but it may change the actual length of the Sequence, depending on the new Time Signature. Thus if you change the Signature of an empty Sequence that is four bars long it will stay four bars long.

However changing the Time Signature of a Sequence which **already contains some drum events** does not change what you have recorded, it only causes the length to be redefined in terms of the new Time Signature. For example, if a Sequence of 3 bars of 4/4 (12 quarter notes) is changed to 3/4, the length will be recalculated to become 4 bars of 3/4 (12 quarter notes). If the new signature makes the Sequence an uneven number of bars, pressing LENGTH will display the number of complete bars along with a "+" to indicate a partial bar.

Click value may be any of 1/2, 1/3, 1/4, 1/6, 1/8, 1/12, 1/16, 1/24, 1/32, 1/48, 1/64, 1/96, 1/192 (realtime).

Beat value has the same range as click value.

Beats/Bar may be any value from 1 to 99.

QUANTIZE

The Quantize level can be set to any value given above for click value (1/192 = QUANTIZE OFF).

SWING

SWING may be used while in any Quantizing level from 1/2 to 1/48.

Number of swing steps depends on the Quantize level. Larger quantizing steps allows more levels of Swing.

Swing is automatically reset to 50% whenever the Quantize level is changed.

FLAMS

Flams (double hits) can be recorded when recording a Sequence, when Quantize is set to 1/96 or OFF (1/192). While in Record, holding the RECORD while hitting a drum key records a Flam.

The PLAY FLAM and LONG FLAM Modes available in Revision 3 DMXs have been deleted.

STEP

The Step Mode advances through the currently selected Sequence by increments which are the same as the Quantize value . If the Quantize is off, this amounts to advancing by 1/192 note increments. Use either arrow key to advance to the next beat of the Sequence. Holding down an arrow will "fast forward" through the steps.

To Record or Erase in Step Mode, STEP must be entered from Record Sequence or Select Sequence. Entering STEP from a Song, for example, cannot occur.

Pressing STEP enters Step mode and plays the first step. When a drum pad is pressed, that drum is recorded on that beat and the DMX will automatically advance to the next step. If you wish to enter more than one event on a particular beat, the automatic advance can be over-ridden by holding RECORD while entering any combination of drums.

Any drum or drums can be removed from a particular step by holding ERASE while pressing the desired buttons. Either arrow button advances to the next step. QUANTIZE can be entered and changed from Step Mode. Changing the Quantize value and pressing QUANTIZE again will leave you on the same step, but the display will reflect the new Quantize value.

RUNNING STEP MODE is now accessed in Edit Parameter 11.

The Digital Splicing feature available in Revision 3 DMXs has been deleted. However, individual events can still be erased from Step Mode.

COPY

Any Sequence may be copied or appended to any Sequence.

Any Song may be copied or appended to any Song using the same procedures used for Sequences.

SONG

Song Tempo: While stopped in Song mode, TEMPO displays the length of the current Song in minutes and seconds. If Programmed Tempo is ON, the time for each Sequence in the Song is calculated at its programed tempo. If Manual Tempo is on, the time of the Song is calculated at the current tempo.

NOTE: Changing the Tempo of a Song requires the DMX's processor to do lengthy calculations. For long Songs, this may slow the machine's response until the calculations are completed (see Edit Parameter 10 on how to turn SONG TIME off). Also the Song Tempo may not be changed while in Manual Tempo, although the time display will be accurate.

Song Edit: Press EDIT while in Select Song mode to enter Song Edit mode, which is used to create new Songs as well as restructuring existing Songs. The arrow buttons step through the parts in either direction, looping around to the beginning after the last part.

If the currently displayed Part is EMPTY, pressing the number keys on the Keypad selects the Sequence to be inserted and automatically inserts it into the Song List. If the currently displayed Part is a Sequence that is a part of the Song, pressing the number keys on the Keypad changes the Sequence number to be a new Sequence.

To insert a new Part, press EDIT while holding down RECORD. This will automatically insert Sequence 00 **before** the currently displayed Part. At this point, entering any Sequence on the Keypad will change Sequence 00 to the desired Sequence.

Holding ERASE and pressing EDIT deletes the current Part.

To go immediately to a particular Part of a Song, you may either step through the Song's parts in Song Edit mode or by pressing LENGTH while in Song Edit Mode. The display will read "SELECT PART X". Entering a Part Number on the Keypad and pressing LENGTH again will leave you in Song Edit mode at that particular Part Number. After finding the desired Part, pressing PLAY will immediately put the DMX into PLAY mode, starting the present Song at the specified Part.

While SELECT SONG Mode, holding ERASE then pressing RECORD erases the entire Song from memory.

The Record Song Mode (recording a Song-on-the-Fly) feature available in Revision 3 DMXs has been deleted.

When the DMX is in STOP, the EDIT key allows Song editing. While playing a Song, the EDIT key permits selecting EDIT PARAMETERS.

The maximum length of a Song is 254 parts.

CASSETTE INTERFACE

As the DMX was revised and improved over the last few years, the Cassette Interface function was also modified to handle the numerous changes in the DMX's data format. The term "Revision 3" is used to distinguish the newer DMX with 5000 note memory capacity from older 2000-note DMXs (Revision 2). The MIDI conversion, in so far as the Cassette data is concerned, is considered to be the "Revision 3" data format. All revisions of DMX as well as DX drum machine data can be loaded into a MIDI DMX. You cannot, however, load MIDI DMX or other Rev. 3 data into a Rev. 2 DMX, for example.

PLAY and CHECK Modes will function normally with Revision 2 casssettes, but individual Sequences and Songs can only be read from Revision 3 cassettes.

Converting Rev. 2 Data to Rev. 3 Data: When Revision 2 data is read successfully by the cassette interface, display reads "REV 2 -> REV 3". The Cassette Interface always writes data to the tape in Revision 3 format, so Revision 2 cassette data can be converted to Revision 3 format by loading the Revision 2 tape into the DMX and then re-recording it onto cassette. This will allow you to read individual Sequences and Songs from the new data tape.

Load a Single Sequence From Cassette: Enter CASSETTE Mode and press the COPY button. The display will read "COPY FROM SEQ XXX" at which point you can enter the desired Sequence to be loaded from tape (much like copying a Sequence). Press COPY again and the display will change to read "TO SEQ XXX" at which time you can enter the desired location in memory for the Sequence to go. Pushing COPY once more will change the display to read "START DATA TAPE." Start the tape and the DMX will load only the desired Sequence into the desired location.

Load a Single Song from Cassette by holding COPY then pressing SONG. The DMX will display "COPY FROM SONG XXX" at which point you can enter the desired Song to be loaded from tape. Press COPY again, and the display will change to read "TO SONG XXX" and you can enter the desired location in memory for the Song to go. Press COPY a third time and the display will change to read "START DATA TAPE". Proceed as above.

NOTE: Loading a Song loads only the list Sequences contained within the Song, not the actual Sequence data.

Sending All Data Through MIDI: While in Cassette Mode, press the TEMPO button. The display will read "SENDING ALL" and the entire contents of the DMX's memory will be transferred through MIDI OUT. Be careful, because **the transfer process begins the moment TEMPO is pressed**. If you have a compatible computer set-up, this is generally a more reliable and quicker way to store data than cassette, although not particularly handy. Note: If you perform a MIDI SEND ALL while slaving to another drum machine you will lose the entire contents of the Slave's memory, replacing it with the Master's memory.

MIDI Transfer of a Single Sequence: Enter Cassette Mode and press the SIGNATURE button. The DMX will display "COPY FROM SEQ **XXX**" at which point you can enter the desired Sequence to be loaded into the Slave drum machine. Press SIGNATURE again, and the display will change to read "TO SEQ XXX" at which time you can enter the desired location in memory for the Sequence to go. Press SIGNATURE a third time and the DMX will immediately send the information through MIDI OUT.

MIDI Transfer of a Single Song: Enter Cassette Mode and while holding down SIGNATURE, press SONG. The DMX will display "COPY FROM SONG **XXX**" at which point you can enter the desired Song to be transferred through MIDI to a slave drum machine. Press SIGNATURE again and the display will change to read "TO SONG **XXX**" at which time you can enter the desired location in memory for the Song to go. Press SIGNATURE a third time and the DMX will immediately send the information through MIDI OUT.

NOTE: Loading a Song loads only the list Sequences contained within the Song, not the actual Sequence data.

MIDI Receiving of Song, Sequence or All Data: The DMX will automatically receive and collate MIDI IN data. The DMX must be in CASSETTE mode while receiving data.

Inverted playback is still selected with the "0" key.

The stop key now always cancels any cassette function in progress, but when the leader is detected, memory is cleared to make way for incoming data. MIDI ALL transfer cannot be cancelled once the transferring has started.

When cassette data is done playing, either "DATA COMPLETE" or the count of errors detected is displayed. An error will usually Result in a single Sequence or Song being lost, but will occasionally have more far reaching effects. Errors involving the ID of a given Song or Sequence results in immediate abortion and the message "BAD TAPE ID". The cassette interface will try to get as much as it can from the tape, but 10 errors aborts it immediately.

BACK PANEL

NEXT Footswitch
Pressing the NEXT Footswitch while playing a Song causes the DMX to "vamp" (in other words, continually loop) on the current Sequence until the footswitch is pressed again or until the footswitch is released, depending on the design of the footswitch. The message "VAMPING PART **XXX**" will appear in Play Song mode except during the first beat of each part when the part and Sequence number is displayed.

Pressing the NEXT Footswitch while in Select Sequence or Select Song mode advances the current Sequence or Song number.

START Footswitch
While playing a Song, the START Footswitch will stop the Song in such a way that pressing the START Footswitch again will continue it from the beat where it left off. When paused, the drum

keys may be played, and the STOP key may be used to return to Select Song mode, but all other keys are ignored.

When in Select Sequence or Select Song mode, the START Footswitch will play the Sequence or Song.

When in Play Sequence or Record Sequence, the START Footswitch returns to Select Sequence Mode.

EXTERNAL TRIGGER Interface
Each of the eight External Trigger Inputs can be programmed to trigger any of the 24 drum sounds. While in the "SET EXT TRIGS" Edit Parameter, playing an external trigger while holding a drum key assigns that drum to that trigger. Note: CVs do not get re-assigned.

SYNCHRONIZING WITH THE MIDI CLOCK

Utilizing the MIDI Timing Clock provides an easy method of interconnecting MIDI devices. For best results, turn off both units before connecting. Using a standard MIDI cable, connect the MIDI OUT jack on the Master to the MIDI IN jack of the unit to be the Slave.

DMX AS MASTER

To use the DMX as the Master, set Edit Parameter 1 to DMX CLOCK and select an appropriate clock rate in Edit Parameter 2 (See **INTERFACE GUIDE**). MIDI CLOCK will always be output at the standard 24 clock-pulses per 1/4-note.

DMX AS SLAVE

To slave the DMX to another MIDI timing source, set Edit Parameter 1 to MIDI CLOCK. You must also set Edit Parameter 0 to AUTO START ON for the DMX to respond to the MIDI Clock.

AUTO START

If a slaved DMX has it's Auto Start function turned ON, it will automatically enter the PLAY mode whenever a MIDI Start Command is recognized. The DMX will stop when a MIDI Stop Command is received or the STOP button pressed, even if MIDI timing pulses continue. If Auto Start is turned OFF, PLAY or RECORD must be pressed on the DMX before starting the Master.

SONG SELECT

Selecting MIDI SONG ON (Edit Parameter 21), enables remote selection of Songs (not Sequences) via MIDI. The DMX transmits and receives Songs 00-99.

RECORDING AS MASTER

Press RECORD and PLAY as before. The slave units will start as soon as the Master DMX starts recording.

RECORDING AS SLAVE

Follow this procedure:
1. Turn Auto Start OFF (Edit Parameter 0)
2. Place the DMX into Record Mode by pressing RECORD and PLAY
3. Start the Master clock source.

MIDI NOTES

The DMX can transmit and receive notes played via MIDI. Drum notes are the same as melodic notes. This means that the DMX can be played from a MIDI keyboard, MIDI drum pads, or even another DMX or Oberheim MIDI DX. MIDI notes such as these can also be recorded and played back as well. Note that playing notes on synthesizers from MIDI drum machines usually does not work, because drum notes have a shorter duration than most synthesizers are capable of playing.

SETTING NOTES TO DRUMS

Since correlating drums with keys on a MIDI keyboard is a matter of personal taste, the DMX enables programming a MIDI note to any of the DMX drum buttons. This can be accomplished by using Edit Parameters 22 & 23.

Connect the MIDI OUT from a controller such as a MIDI keyboard or another DMX (or MIDI DX) to the MIDI IN of the DMX. All notes must be within a 21/2 octave range, starting at the transposition setting, so change the transposition setting if the notes are not within the desired range (Edit Parameter 23). While in this parameter mode, hold RECORD and press the note desired to be the bottom of the range. The MIDI Note Number will appear in the display.

Next, select Edit Parameter 22. Playing a note into the MIDI IN while holding a drum button sets the note to that drum. Playing a note into the MIDI IN while holding ERASE sets the note not to play any

drums. Several notes can be assigned to a particular drum button but each note cannot be assigned to more than one drum. Pressing RECORD and ERASE clears all settings.

There is an informal standard arrangement used by other drum machines which is incorporated within the DMX's default configuration shown in the keyboard diagram on Page 21. The DMX can be reset to this configuration by pressing RECORD & COPY while in Edit Parameter 22.

When using the DMX to transmit drum buttons to another instrument, only the highest note programmed to that drum will be transmitted.

REALTIME MIDI RECORD

One additional feature of the DMX is the ability to transfer sequences between **different brands** of drum machines. This is done by recording on the DMX while slaved to another drum machine. The second machine sends notes across MIDI as it plays them, and the DMX simply records the notes that are received. To transfer sequences, connect the two drum machines so that the DMX is the Slave unit.

Set the Edit Parameters on the DMX:

0	AUTO START OFF
1	MIDI CLOCK
3	RECORD COUNT OFF
16	RECEIVE CHANNEL:
	should be the same as on the master's transmit channel or...
18	OMNI MODE ON

Set the master drum machine to transmit MIDI timing. Make sure TEMPO, LENGTH, and QUANTIZE settings of the Slave are appropriate for the sequence to be recorded. Press RECORD and PLAY on the Slave unit, then start the Master.

Remember that the DMX will record the assigned MIDI Notes, which are not necessarily the same drums on both machines. Make sure that the drums of the Master machine are assigned to appropriate buttons on the slave. See "Setting Notes to Drums," above.

Some other models of drum machines can also record from the DMX via MIDI. If the drum machine can read MIDI Notes from the DMX, it should be able to record them. For more information, refer to the Interface Guide as well as the owner's manuals of the other drum machines.

The DMX now has several functions that act as general maintenance routines for the memory of your Sequences and Songs. They are described as follows:

DATA CHECK

One of the features of the DMX is a Data Check routine that runs automatically when the unit is turned on and also when you exit the CASSETTE mode. Data Check examines each Song and Sequence to make sure that it is properly configured in memory.

Bad Sequences can appear in the DMX's memory in several ways. If there is illegal information in a sequence, the Data Check routine will identify the sequence and alternately flash the message "SEQUENCE **XXX** BAD" on the display followed by the message "ERASE DELETES". If an error is found in a Song, the message "SONG **XXX** BAD" will appear on the display followed by the message "ERASE DELETES".

Press ERASE to delete the bad Sequence or Song. If any other button on the DMX's front panel is pressed, the Sequence or Song in question will not be deleted and will remain in memory as is. Data Check will then continue its routine and look for more bad Songs or Sequences, if any.

After checking all of the Songs and Sequences, the DMX will return to normal operation. Be careful when working with bad Songs or Sequences (the ones you declined to delete). In particular, any attempt to alter a bad Sequence by Recording, Erasing, Copying etc. will almost always cause the DMX to crash its memory or lock-up. See "IF YOUR DMX GETS LOST" below.

RAM CHECK

Besides the Data Check routine, the DMX will also check the RAM (Random Access Memory) circuits that contain your Sequences and Songs. RAM Check is run every time the DMX is turned on. This routine checks for bad data in memory when the unit is powered on. Random data of this type can result from a loss of the back-up battery's power to the memory, for example. If the back-up battery inside your DMX is low or dead, memory will get lost or scrambled and the RAM Check will detect this. The most common source of this problem is poor A.C. power to the DMX. Any power outages or spikes in the A.C. caused by air conditioners or even power amplifiers on the same house current will contribute to this problem.

If the data in memory is is bad for any reason upon turning the DMX on, the DMX will "beep" and display "DATA MAY BE BAD" followed by a "PRESS < > TO CLEAR" prompt. Pressing both arrow buttons **erases everything** in memory and resets the Edit Parameters.

IF YOUR DMX GETS LOST

If error messages from the RAM Check appear on the display, the DMX has gotten lost or confused due to bad data in memory. In this extreme case, clearing memory will take care of the lock-up problem, but the side-effect is that you will lose all of your memory in the process. This is why we **strongly advise** that you record your memory onto cassette on a regular basis. If a back-up data cassette of your programs is not available, immediately enter CASSETTE MODE on the back of the DMX's back panel and make a data tape according to the procedure in your DMX Owner's Manual.

When your data is safely on cassette, proceed as follows:

1. Exit CASSETTE MODE.

2. Press any button on the DMX front panel. This will attempt to get the DMX to proceed in its normal operation.

3. If the DMX locks up again, the only alternative is clear memory. Turn the machine off. Hold the ERASE button while turning the DMX back on. This **"FAILSAFE ERASE"** mode will clear memory entirely and reset the Edit Parameters. You can now load data back in from the tape you made and use the DMX as before.

INSTRUMENT	DMX EXTERNAL CLOCK		DMX MIDI CLOCK	
	DMX as Master	DMX as Slave	DMX as Master	DMX as Slave
	CLOCK OUT	CLOCK IN	MIDI OUT	MIDI IN
OBERHEIM				
Non-MIDI DX w/out STRETCH	96	96	NO	NO
Non-MIDI DX with STRETCH	96,48,24	96,48,24	NO	YES
MIDI DX w/ or w/out STRETCH	96,48,24	96,48,24	YES	YES
DMX w/out MIDI	96	96	NO	NO
DMX w/ MIDI	96,48,24	96,48,24	YES	YES
DSX	96	96	NO	NO
EMu SYSTEMS				
Emulator II	96,48,24	24	YES	YES
Drumulator	96,48,24	24	NO	NO
SP-12	96,48,24	24	YES	YES
KURZWEIL				
250	96,48,24	NO	YES	YES
LINN				
LinnDrum	48	96,48,24	NO	NO
9000	48	48,24	NO	YES
PPG				
Wave 2.3	NO	96,48,24	NO	NO
ROLAND				
MSQ-700	NO	NO	YES	YES
MSQ-100	NO	NO	YES	YES
TR-909	NO	NO	YES	YES
TR-707	NO	NO	YES	YES
SBS-10	96	NO	NO	YES
SBS-80	96	NO	NO	YES
SEQUENTIAL				
SixTrak	NO	NO	YES	YES
DrumTracks	96	96	YES	YES
64 Sequencer	48,24	NO	NO	NO
TOM	24	24	YES	NO
Multi-Trak	24	24	YES	YES
YAMAHA				
RX-15	96,48,24	24	YES	YES
RX-11	96,48,24	24	YES	YES
QX-1	NO	NO	YES	YES
QX-7	NO	NO	YES	YES

How the Chart Works

This chart is intended as a guide to Timing Compatibility among a number of popular MIDI instruments with the MIDI DMX. To use this chart, identify the drum machine that you intend to interface with the DMX in Column 1. Along the row across, you will be able to determine the compatibility of this drum machine with your MIDI DMX from the information provided in the remaining Columns.

As an example, suppose you want to inter-connect a Yamaha RX-15 with a MIDI DMX. Using these instruments' CLOCK IN and CLOCK OUT jacks, either can be used as a Master or as a Slave. When the DMX is the Master, Column 2 tells you that 96, 48, or 24 can be used as a Clock Out rate. If the DMX is a Slave to the RX-15, Column 3 lists 24 clock-pulses as the Timing Source. The DMX can be used as the Master to drive the RX-15 via MIDI (Column 4 "DMX as Master" = YES), and vice-versa when the RX-15 is the Master (Column 5 "DMX as Slave" = YES).

The information listed above was provided by the manufacturers and / or distributors of the named products at the time this manual was printed. We assume no liability for inaccurate or incomplete information provided to us in compiling this Interface Guide.

Default MIDI Note Assignments - DMX MIDI Drum Machine

Matrix-12 / Matrix-6		MIDI Note Range
	67	
	65	
	64	
	62	Tamb 1
Middle C	60	Tamb 2
Shaker 1	59	Snare 1
Shaker 2	57	Snare 2
Rimshot	55	Bass 1
	53	Bass 2
Ride 2	52	Ride 1
	50	High Tom 2
Crash	48	High Tom 1
Hi-Hat Open	47	Mid Tom 2
Accent	45	Mid Tom 1
Closed	43	Low Tom 2
	41	Low Tom 1
Claps	40	
Claps	38	Snare 3
	36	Bass 3

Default MIDI Note Assignments·DX MIDI Drum Machine

Matrix-12 / Matrix-6

Note	Left Label	Right Label
67		
65		
64		
62		
60	Middle C	
59	Shaker 1	Snare 1
57	Shaker 2	Snare 2
55		Bass 1
53		Bass 2
52		Ride 1
50	Ride 2	High Tom
48	Crash	
47	Hi-Hat [Open	Mid Tom
45	Accent	
43	[Closed	Low Tom
41		
40	Claps	
38	Claps	Snare 3
36		Bass 3

MIDI Note Range

IF YOU HAVE A PROBLEM

The staff at ECC / Oberheim wish to thank-you for purchasing an Oberheim product and hope that you will remain a long-time Oberheim player. We are confident that your instrument will provide you with years of excellent service as each unit is thoroughly tested and inspected before it leaves the factory. The Owner's Manual was written to be logical and comprehensive so that you will be able to get the most out of your Oberheim.

Although we have taken great care in manufacturing your Oberheim instrument and preparing thorough documentation in the manual, products at this level of technology may require servicing. The following Warranty Policy outlines your rights and responsibilities, and also lists several limitations of coverage and important exclusions. We strongly recommend that you read the following policy statements carefully and refer to the procedure at the end in obtaining service for your Oberheim product should it ever be needed.

OBERHEIM LIMITED CUSTOMER WARRANTY
(Non-Transferable)

Oberheim, a Division of E.C.C. Development Corporation, warrants its products, when purchased in the United States of America from an Authorized Oberheim Dealer, to be free from defects in materials or workmanship for a period of 12 months from the date of purchase. Warranty service is effective and available to the original purchaser **ONLY**, and only upon completion and return of the Oberheim Warranty Registration card within 14 days of the date of purchase.

Warranty coverage is valid for Factory-Authorized updates to Oberheim products when their installation is performed by an ECC / Oberheim Authorized Service Center and a properly completed Warranty Certificate is returned to the factory within 14 days of installation.

To obtain service under this Warranty, the product must, upon discovery of the defect, be properly packed and shipped to the nearest Oberheim Authorized Service Center. The party requesting Warranty service must provide proof of original ownership and date of purchase of the product, or date of installation of the update, by supplying to the Oberheim Authorized Service Center either the Warranty Registration Sticker applied to the unit itself, or the sales receipt / installation receipt. In the event that both have been lost or misplaced, the Service Center shall, at the Service Center's or owner's expense, contact Oberheim to verify the Warranty status of the product.

If the Warranty has been verified, Oberheim will, without charge for parts or labor, either repair or replace the defective part(s). If the Warranty cannot be verified, the entire cost of the repair in parts and labor is the responsibility of the product's owner.

PRICES AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

WHAT IS COVERED
ECC / Oberheim warrants that it will make all necessary adjustments, repairs or replacements at no cost to the original owner within the first 12 months from the purchase date if:

1. The product fails to perform its specified functions due to failure of one or more of its components.

2. The product fails to perform its specified functions due to defects in workmanship.

3. The product is maintained and operated by the owner in strict accordance with the written instuctions for proper maintenance and use as specified in the Owner's Manual.

WHAT IS NOT COVERED
Before purchasing and using, the owner shall determine the suitability of the product for his/her intended use, and the owner assumes all risk and liability whatsoever in connection therewith. Oberheim shall not be liable for any injury, loss or damage, direct or consequential, arising out of the use or inability to use the product.

The Warranty provides only the benefits specified and does not cover defects or repairs needed as a result of acts beyond the control of Oberheim including but not limited to:

1. Damage caused by abuse, accident or negligence.

    Oberheim will not cover under warranty any Sound Chip or Voice Card damaged or destroyed as a result of the owner's mis-handling, or the improper removal and installation into the DMX, DX or Stretch Digital Drum Machines.

2. Any tampering, alteration or modification of the product's mechanical or electronic components.

3. Failure to operate the product in strict accordance with the procedures written in the Owner's Manual.

4. Repairs performed by unauthorized persons.

5. Damage caused by fire, smoke, falling objects, water or liquids etc. or acts of God such as earthquakes, floods, lightning, tornadoes, storms, etc.

6. Damage caused by operation on improper voltages.

IMPORTANT   NOTICE: The warranty is VOID if the product is electronically or mechanically modified, altered or tampered with in any way.

Oberheim shall not be liable for costs involved in packing or preparing the product for shipping with regards to time, labor or materials, shipping and freight costs, or time and expenses involved in transporting the product to and from an Oberheim Authorized Service Center, an Oberheim Authorized Dealer or the Oberheim Factory. If a suitable shipping container is unavailable, a replacement carton may be purchased from Oberheim.

Oberheim will not cover under Warranty an apparent malfunction that is determined to be in fact user error, or the owner's inability to use the product.

Oberheim will not cover under Warranty an apparent malfunction that is inaccurately or inadequately described by the owner to the Service Center at the time of repair.

THE DURATION OF ANY OTHER WARRANTIES, WHETHER IMPLIED OR EXPRESS, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN.

Oberheim hereby excludes incidental and consequential damages, including but not limited to:
1. Loss of time
2. Inconvenience
3. Delay in performance of the Warranty
4. The loss of use of the product
5. Commercial loss
6. Breach of any express or implied warranty, including the Implied Warranty of Merchantability, applicable to this product.

Oberheim shall not be liable for damage or loss resulting from the negligent or intentional acts of the shipper or his contract affiliates. The owner of the product should contact the shipper for proper claims procedures in the event of damage or loss resulting from shipment.

HOW TO OBTAIN WARRANTY SERVICE
If you have reason to believe that your Oberheim product is malfunctioning or otherwise not operating properly, do the following:

STEP 1: **CONTACT YOUR NEAREST ECC / OBERHEIM SERVICE CENTER**
Telephone them as soon as the problem is discovered. Be prepared to discuss the problem as completely

and accurately as possible. A current roster of Authorized Service Centers is included with the Owner's Manual.

The Service Center will let you know when the repair can be scheduled, the approxiamate number of days it will take to complete the repair and if the required parts are in stock or if they need to be ordered.

Take the failed unit to the Service Center along with the sales receipt as the Service Center will need to verify the Warranty. If you have returned your Warranty Card, the Warranty Verification Sticker affixed to the bottom panel of your unit is sufficient to prove warranty status.

The Service Center will then inspect the product and take the necessary steps to complete the repair.

If the product continues to malfunction or another problem different from the original problem occurs, contact the service center IMMEDIATELY so that the problem can be resolved without delay or futher complications.

STEP 2. **CONTACT YOUR ECC / OBERHEIM DEALER**

If you feel that your problem has not been resolved, contact the Oberheim Dealer where the product was purchased. It will be most expedient if you discuss the matter personally with the salesperson who sold you the instrument. By making the salesperson aware of your situation, they will be in a better position to assist you in getting the problem resolved.

STEP 3: **CALL OR WRITE TO THE OBERHEIM FACTORY**

If you believe that the problem is still unresolved after you have contacted the Service Center and Dealer, contact the Oberheim factory. In an attempt to resolve your problem, we will work with your local Service Center or Dealer to review and verify the information and facts. Based on these facts, we will advise or consult with the Service Center or Dealer as appropriate.

Written correspondence should be addressed to:

OBERHEIM
Division of E.C.C. Development Corporation
Customer Services Department
11650 Olympic Boulevard
Los Angeles, CA   90064

Every attempt will be made to respond to your letter as quickly as possible.

If you would prefer to contact the Oberheim factory by telephone, a Service Representative will be available to assist you. Our telephone hours are from 1:00 PM to 4:00 PM West Coast Time, Monday through Friday **only.** The Customer Services Department can be reached at 213-479-4851. Collect calls cannot be accepted.

When calling the ECC / Oberheim offices:

√ Have your instrument and amplifier turned on and in front of you when you are on the phone. You should also have your Owner's Manual with you.

√ Tell the receptionist that you are having a problem with your Oberheim product and ask to speak to a Service Representative.

√   Be prepared to provide the following information:

1. Your name.
2. The model of the product.
3. The product's Serial Number.
4. The name of the Dealer from where it was purchased.
5. The exact date of purchase.
6. A complete description of the problem.

When writing to Oberheim, please also include your full address, telephone number and the best time to call should it be necessary to call you rather than answer your letter.